

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An electromagnetic pump comprising:

a cylinder;

a moving member (10) being movably accommodated in said cylinder, said moving member (10) having a permanent magnet;

~~an air-core air-core electromagnetic coil coils (50a, 50b), in which electric current flows in opposite directions,~~ being fitted around said cylinder, said air-core electromagnetic coils reciprocally moving said moving member (10) in an axial direction when electricity is supplied to said coils;

pump chambers (30a, 30b) for sending a fluid, said pump chambers being formed in said cylinder;

an air-core detecting coil (53) for detecting reciprocating motion of said moving member (10), ~~said air-core detecting coil (53) is fitted~~ being fitted around said cylinder so as to be coaxial with said air-core electromagnetic coils (50a, 50b);

said air-core detecting coil (53) being fitted close to axial end faces of said air-core electromagnetic coils (50a, 50b), which are faced to each other; and

yokes (26a, 26b) being provided to the axial end faces of said air-core detecting coil (53); and

an outer yoke (52) being provided on an outer circumferential face said air-core detecting coil (53),

wherein a magnetic circuit, through which magnetic flux generated from the moving member (10) passes, is constituted by said yokes (26a, 26b) and said outer yoke (52), and

a position of said moving member (10) is detected by detecting an increase of the magnetic flux interlinking with said air-core detecting coil (53), the increase of magnetic flux is caused by a magnetic circuit which passes through said yoke (26a), and said outer yoke (52), and said yoke (26b), and through which the magnetic flux generated, from said moving member (10), by the reciprocating motion of said moving member (10) passes.

2. (Canceled)

3. (Canceled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently Amended) The electromagnetic pump according to claim 1, wherein an induced voltage detected by said air-core detecting coil (53) is detected in a detection range, in which variation of the electric current flows through said air-core electromagnetic coils (50a, 50b) is small and variation of the induced voltage caused by magnetization of said air-core electromagnetic coils (50a, 50b) is small.